Pearson Education, Inc.
CME Project Algebra 2, Algebra II

Degree of Evidence regarding the Standards for Mathematical Practice:

Limited Evidence

Summary of evidence:

1. **Make sense of problems and persevere in solving them**. Open-ended questions are presented frequently throughout the text. There are numerous opportunities for students to analyze the mathematics and to explain their findings, especially in the "For Discussion" sections in each lesson. Students are also asked to provide explanations in the "Write About It" exercises. Students frequently work with tables, graphs, and equations to help foster the mathematical connections between the different representations. The Mathematical Reflections questions seem to be less about reflection and more about practicing applications and explaining concepts in your own words. There is a formulaic problem-solving process involving the Habits of Mind, but it does not limit students in their own efforts to problem solve using their own methods. There are some opportunities for students to analyze through error analysis to determine if they grasp the concept (e.g. p. 434 #14). Open-ended problem-solving opportunities are inherent in the activities and in-class experiments as well as the practice problems. There are frequent opportunities for students to create a problem-solving plan and to carry it out, checking their results for accuracy.
2. **Reason bstractly and quantitatively**. Application problems are presented throughout the text. This text seems to be lacking slightly in the number of application problems for certain concepts (e.g. The chapter on Exponents does not include applications until students start to work with Exponential Functions). In the chapters reviewed, students are frequently asked to create a model for the problem situation within each section (e.g. p.401 product model, p. 425 difference table). Students are sometimes led to derive the formulas on their own. Most of the time, though, it seems the formula is presented alongside the activity intended to help them derive it, which can lead to some students to not persevere in the activity on their own. Questions are geared towards students discovering the algorithm for the mathematics on their own or in groups, but students are presented the algorithm or formula immediately following the activity directions, robbing them of the motivation to find the formula for themselves. Teachers would need to carefully implement the investigations.
3. **Construct viable arguments and critique the reasoning of others**. In the chapters reviewed, there are frequent opportunities for students to explain their answers, especially in the "Write About It" and "Take It Further" problems. This explanation is geared more towards writing a justification with the occasional opportunity to share with others. There is no mention of students sharing their methods with the class or working together in the student resources, but it is encouraged through the strategies presented in the teacher resources. Many of the problems and investigations lend themselves easily to helping students to communicate mathematical understanding to others. The opportunities for students to justify their thinking to others are available throughout the text, but they rely heavily on how the teacher facilitates the lesson and on what problems are assigned for practice.
4. **Model with Mathematics**. In the chapters reviewed, students are frequently asked to create a specific mathematical model to work with to solve a particular problem. The text does seem to direct students in the type of model to use and does not specify that the students have choice in what model to use. As students progress in their understanding of the concept covered in the lesson, they continue to build the connection among tables, equations, and situations. Students move from the models to the symbolic representations or formulas they have conjectured and

tested on their own.

5. **Use appropriate tools strategically.** There is limited reference to the use of graphing calculators inherent in the chapters reviewed. Calculator use is mentioned in the teacher resource "Technology Tips". There is a "handbook" on pages 778-802 for using the TI-Nspire graphing calculator for the teacher to implement, though the rest of the text does not seem to advocate for a particular technology over another. The text seems to allow for some flexibility of choice in the use of technology or the use of hands-on tools in order to complete the in-class experiments. It would be up to the teacher to incorporate either. There do not seem to be built-in opportunities to discuss the appropriateness of a particular tool for a particular task.
6. **Attend to precision.** Examples use proper notation and are precise. Sections often include a discussion of proper notation (e.g p.406). In the chapters reviewed, the importance of precise communication is mainly dealt with regarding proper notation only and less about communicating efficiently. Communication about the mathematics is presented in sections titled Minds in Action that follow the conversation of two students working through the math concept of that section. This does not guarantee that students will adopt the communication skills in to their own practice. Students are given some opportunities to share their solutions with others, but the opportunities are mentioned mainly in the "For Discussion" sections and would be up to the teacher to implement. Overall, there is attention to precision in the examples and problems but no discussion for students to tackle, unless the teacher incorporates the opportunity on his/her own.
7. **Look for and make use of structure**. In the chapters reviewed, there are opportunities for students to look at examples and then generalize the mathematics. Students usually discover the mathematical rule for themselves based on noticing patterns. Most activities lead the students to the desired outcomes and are less open-ended. The activities are sometimes more about following the prescribed set of directions or just verifying a mathematical truth already outlined for the students. In the chapters reviewed, there is frequent connection to prior learning. There are numerous opportunities for students to generalize their findings.
8. **Look for and express regularity in repeated reasoning.** In the chapters reviewed, there are many problems where students are asked to notice a pattern and generalize the rule. Frequent In-Class Experiments give students the opportunity to make sense of the mathematical rules and to form their own generalizations. Students are directed to establish a process for solving particular problems (e.g. p. 428 Habits of Mind side-notes). Overall, there are frequent opportunities for students to generalize a pattern to determine a rule. The rule is typically printed immediately following the activity students are trying to complete in order to find the rule, and could cause a lack of motivation on the students' part to persevere in the discovery on their own.